

## 5 CLAIMS:

1. Adsorbent compositions for removing pesticides like chlorpyrifos, malathion and other organo halogen/sulphur pesticides comprising gold/silver nanoparticles having a size upto 10 150 nm deposited on activated alumina and/or magnesia.
2. Adsorbent compositions as claimed in claim 1, which is prepared by loading silver and gold nanoparticles on activated alumina and/or magnesia. 15
3. Adsorbent compositions as claimed in claim 2, wherein said activated alumina or other substrates are in the various forms such as globules and powder. 20
4. Adsorbent compositions as claimed in claim 2, wherein the silver and gold nanoparticles are used along with activated carbon in all compositions. 25
5. A device for decontaminating water contaminated with pesticides like chlorpyrifos, malathion or other organo halogen/sulphur pesticides which comprises a housing loaded with gold/silver nanoparticles having a size upto 150 nm supported on activated alumina and/or magnesia, said housing provided with an inlet connectable to water supply source and an outlet for decontaminated water, said outlet being provided with regulatory 30 means.

5 6. A method of decontaminating water by removing pesticides such  
as chlorpyrifos, malathion or other organo halogen/sulphur  
pesticides comprising the step of allowing contaminated water to  
flow through a bed of gold/silver nanoparticles having a size upto  
10 150 nm supported on activated alumina and/or magnesia to  
adsorb said pesticides and collecting decontaminated water  
flowing out of said bed.